

JOBSCOPE®

Jobscope, the most comprehensive job costing and integrated business information system for your order-driven company, balances critical requirements, function, and technology while offering the comfort and confidence necessary to overcome your unique manufacturing challenges.



Engineering

Engineering

The Design Engineering and Manufacturing Engineering departments have the responsibility for taking diverse, disjointed information and turning it into a finished design. This information may come from sales, the customer, past designs, multiple CAD systems, and other sources.

The Jobscope engineering suite of modules provides the tools that the design engineering and manufacturing engineering departments need to efficiently carry out this daunting mission.

The Engineering Releases function which will be described later allows the work to be defined and tracked through these departments and on to manufacturing.



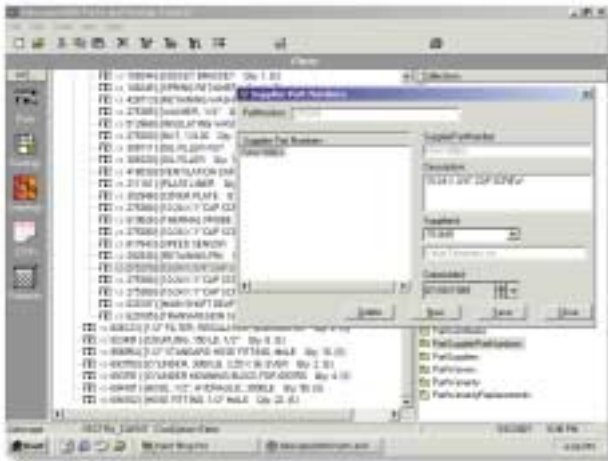
The overall design flow process is the CAD system or Excel spreadsheet into the Design Data Management module, then onward into the Manufacturing Engineering subsystem, and then through to the Production Planning and Control subsystem.

Design Engineering

Overview

The Design Engineering subsystem takes up the design process where the CAD system leaves off and carries it through to the Manufacturing Engineering subsystem. The Design Engineering subsystem is intended to allow the design engineers to do their work in the CAD system then pass the work off to someone else who takes care of creating new part numbers and bills of material.

The Design Engineer loads the drawing items directly into the CAD system or a Microsoft Excel spreadsheet. The Design Engineer may enter these items with company part numbers, or supplier part numbers, or with no part numbers at all.



Multiple Part substitutes may be defined within the Bill of Material.

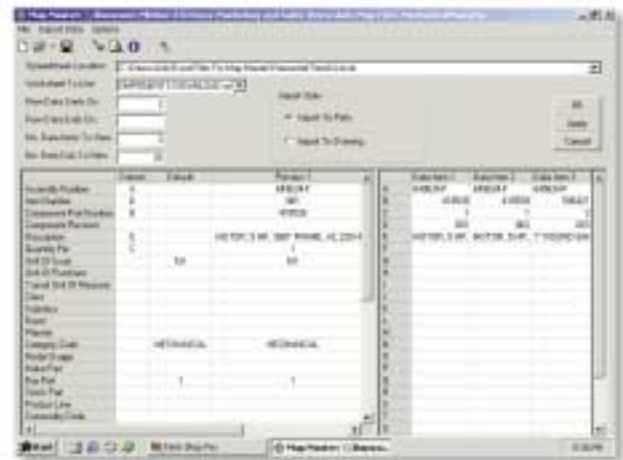
The Design Engineering subsystem is made up of two principal application modules: the Design Data Management module and the Map Master module. The Design Data Management module takes care of getting the drawing out of the CAD system and into JOBSCOPE and assigning part numbers to the drawing items. The Map Master module provides for uploading Drawing Parts Lists from Microsoft Excel.

Features

- Loads drawings and drawing items from the CAD system
- Loads drawings and drawing items from Microsoft Excel Spreadsheets
- Assigns and/or creates new part numbers from Microsoft Excel upload
- Links supplier part numbers to company part numbers
- Maintains Drawing masters, drawing items, and drawing revisions
- Creates bills of material from assembly drawings
- Creates Engineering Releases

Map Master

Microsoft Excel is a common point for data in the engineering world. CAD systems can download drawing and bill of material data to it, external engineering departments may send bill of material data in Excel, and many engineers prefer it as the place where they develop bills of material and parts lists.



You can import bills of material from Excel.

Map Master provides a means for taking this data from an Excel spreadsheet and creating assembly drawing lists, bills of material, or both. Map Master can handle either single level or multi-level bills of material in a single spreadsheet.

The process begins by creating a "map". This map defines where the data from the Excel spreadsheet columns go in the database. As an example, in a bill of materials, the upper level part number may be in column A, the lower level part number in column B, and the quantity in column C. This information would constitute a "map". Many different maps may be defined, so that spreadsheets need not be reformatted prior to being uploaded to the Jobscope database.

If some or all the part numbers in the spreadsheet do not exist in the database, Map Master can create them, using a combination of data from the spreadsheet, and default values which are established when the “map” is created.

Map Master is the tool that brings bills of material from multiple sources together in one easy to use process.

Design Data Management

The Design Data Management module turns CAD drawings into ready-to-use bills of material. You can browse to the drawings and display the drawing items. The drawing may have company part numbers, vendor part numbers, no part numbers at all, or some combination of these. If the system knows the part numbers, it will display them.



You can import assembly drawing data directly from your CAD system.

The system will translate supplier part numbers if the Design Engineer has used any.

You can update the JOBSCOPE record of the drawing and its items by clicking on Save. This also allows you to optionally define the assembly part number, Engineering Release, and Engineering Change Number. You can also define authorized suppliers for each part, and the supplier’s part number. An unlimited number of suppliers and supplier part numbers may be added per part.

Manufacturing Engineering

Overview

In Manufacturing Engineering, Design Engineering information is translated into activities for actually accomplishing the work.

Manufacturing Engineering receives the Design Engineering information in the form of engineering releases. The engineering release contains engineering release line items, or lines, which identify the drawings, bills of material, and other data that are being released. Some of the release line items, or lines, require routings to be created. This is done in Manufacturing Engineering.

Engineering release lines may release drawings and bills of material for items which are part of larger

assemblies not yet released. JOBSCOPE’s Manufacturing Engineering module explodes each engineering release line into planning work orders and shows like items previously released on the job. The manufacturing engineer may then decide how to disposition these lower level items.



Engineering releases show the status of the engineering work.

The manufacturing engineer may disposition a planning work order or group of planning work orders in a number of different ways.

- Create shop work orders from the planning work order(s)
- Purchase the item or items on the planning work order(s)
- Designate that the planning work order(s) is covered on another engineering release
- Designate that the planning work order(s) will be superseded by a another release (such as design engineering errors)
- Substitute an alternate item
- Combine the planning work order with an existing work order

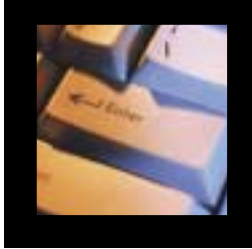


The results of the manufacturing engineering dispositions is routed automatically to the shop, purchasing, subcontracts, or back to design engineering.

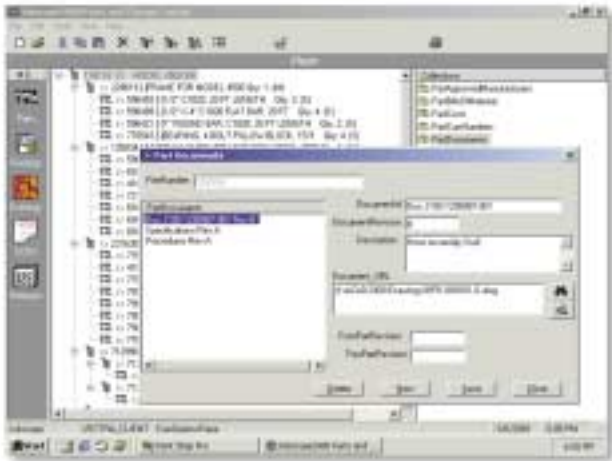
Features

- Links supplier part numbers to company part numbers
- Manages Engineering Releases
- Creates Engineering Change Notices
- Processes Part Revisions
- Generates Model Effectivity
- Maintains Outside Processing details
- Allows multiple selling prices per part
- Allows multiple cost arrays per part
- Maintains part inspection methods
- Links documents electronically
- Allows multiple routings per part

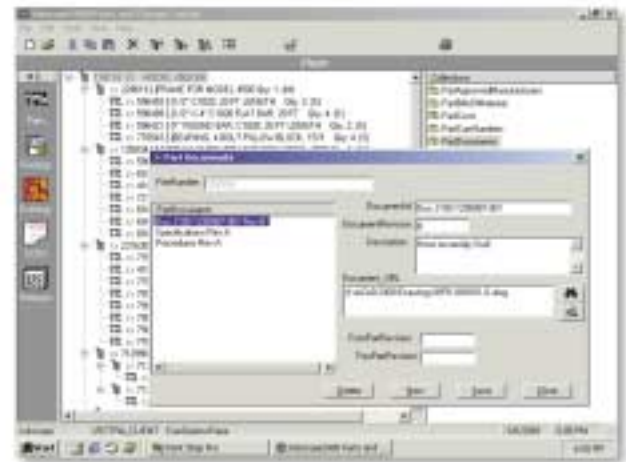
- Allows mass changes for bill of material components
- Defaults routings for part assembly, evaluation, receiving inspection, teardown, and repair
- Allows for make/buy decision override
- Maintains part routing costs
- Creates part substitutes
- Creates part waivers
- Creates part warranties
- Maintains Model Usage
- Generates Change Control for bills of material and routings



The Parts Mode allows you to maintain functions within the collections.



Drawings can be linked to individual parts or to multiple parts.



Multiple documents can be linked to parts.

Parts and Change Control

The Parts and Change Control module has four modes of operation, Parts, Routings, Drawings, and Engineering Change Notices (ECN).

Each mode of operation has its own main window display, and its own collection of associated tables. The collection list is displayed on the right side of the window. The collection provides quick access to all the data related to the data in the main window display.

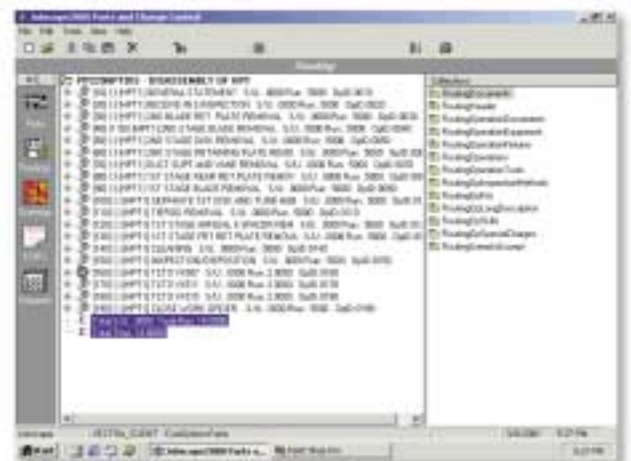
Parts Mode

The Parts mode display can list all levels of an indented bill of material, or it may be collapsed to a single level. More than one bill of materials may be displayed, and bill of material components copied and pasted from one to another. Complex assemblies may be built in this window, or copied from assembly drawings.

A mass change feature allows all bill of material components in an assembly to be updated in a single entry.

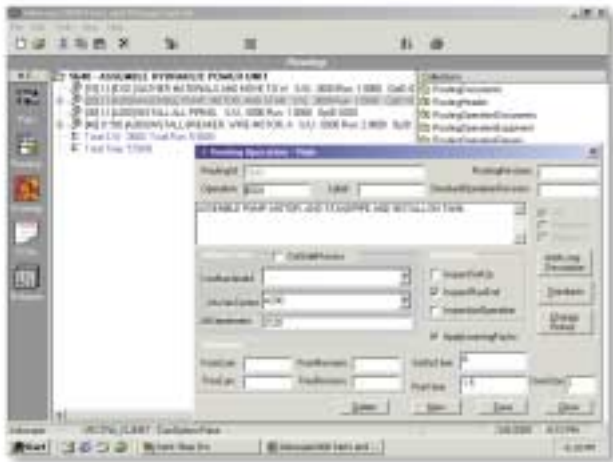
Routings Mode

In Routings mode, the main window display lists the selected routing and the Routings collection. Routings not under change control may be updated here.



The Routings mode allows you to maintain your routing data.

Routing operations may have QA Inspections, QA Inspection Methods, employee skill requirements, tools, fixtures, equipment, and documents linked. Linked documents may be displayed by double clicking on the link.

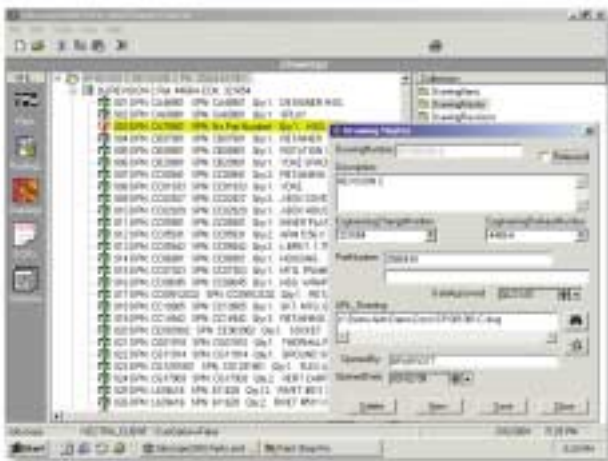


In Routings Mode, you can display all operations associated with the routing.

Drawings Mode

Drawings mode displays the drawing master, drawing revisions, and drawing items. Drawing items are the individual parts called out on assembly drawings.

When drawings are initially extracted from the CAD system in the Design Flow Control module, they may not have part numbers, either because the design engineer didn't know the part numbers, or, more likely, because they were new parts for which part numbers had not been assigned. The new part numbers may be assigned in the Design Flow Control module, or here, in the Drawings mode of the Parts and Change Control module.



The Drawing Master maintains information on the drawing.

The simple process of extracting the drawing from CAD creates the drawing master, the initial drawing revision, and the drawing items, all with a transaction.

Revisions to the drawing are maintained here, by clicking on Drawing Revisions in the collection. Both the drawing master and drawing revisions may be linked to Engineering Releases and Engineering Change Notices.

ECN Mode

The ECN mode of the Parts and Change Control module provides two primary functions. One is to provide a master record of the Engineering Change Notices and their implementation status, and the other is to actually make changes to bills of material and routings that are under change control. In JOBSCOPE, "under change control" means that users are not allowed to simply access a bill of material or routing and change it, but rather the change must be linked to an ECN so that changes are tightly controlled.

To change a bill of material or routing in ECN mode, you must open the bill of material or routing under the applicable ECN and make the changes there. This allows the program to automatically link the changes to the ECN and its associated Engineering Release, if one exists.



The ECN Mode allows you to make changes to items under change control.

You can open a bill of material or routing and make multiple changes to either of them, or you can specify a part number that is to be removed or replaced, and select the assemblies in which the change is to be effective.

Both model effectivity and revision processing is provided for both bills of material and routings. Model effectivity is based upon cumulative numbers, with number 1 being the first unit made, number 2 the second, etc. The displays can be tailored to show the bills and routings in their entirety, or only for the cumulative number entered.

The ECN process begins with an Engineering Change Master. After the master is opened, the required changes such as bill of material, routings, etc. are initiated by opening the applicable window in the ECN collection. The actual changes are then made as required.





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